

- B) at least one layer of a composite stiffening material
attached to each of said two planar surfaces.**

In claims 2-19 at line 1 after "The" insert - - structural - -

Add the following new claim 20:

**20) The structural composite sandwich of claim 19 wherein said micro
multi-void is fabricated from a metal and said at least one layer of a
composite stiffening material comprises a metal matrix composite.**

Remarks

**Claims 2-19 are currently pending in the application. An oral provisional
election with traverse was made to prosecute claims 2, 3, 5-12 and 14-19. Such
traverse was based upon the inclusive nature of claim 2 that properly recites that
the multi-void core can be fabricated from a "member selected from the group
consisting of" polymers and metals. As such full and complete examination of this
claim will require a search of all prior art that might include each of the recited
species, metals or polymers. Accordingly, the exclusion of claims 4 and 13 which
merely introduce elements defining the particular types of polymers being claimed
clearly fall within the field of search required for the evaluation of claim 2.**

**Accordingly, Applicant again traverses the restriction requirement, but presents
arguments below for the patentability of all rejected claims as previously recited.**

Claim 19 has been amended to better state the substance of Applicant's invention through the inclusion of language specifying that the multi-void is a "micro multi-void" as clearly defined at page 5, line 4 through page 7, line 12 of the specification. Basis for the insertion of the word "structural" in all of the pending claims can be found throughout the specification but particularly in the Background of the Invention and at page 10, lines 10-21. Additionally, new claim 20 has been added to clearly specify that the micro multi-void is fabricated from a metal and that the composite layer is a metal matrix composite as described in the description of the preferred embodiments at page 7, line 5 through page 10, line 9.

Claims 2, 3, 5, 6 and 19 stand rejected under 35 USC 102(b) as anticipated by Dobson, U.S. Patent No. 4,257,481. According to the Examiner's interpretation, Dobson discloses a heat exchange element comprising a multi-void core having two planar surfaces and at least one layer of a composite stiffening material attached to each of the two planar surfaces and specifically references Figures 1 and 5. The structure described in connection with Figure 1 comprises, not a multi-void as described in the instant application, but rather an array of conduits laid side by side and then embedded in a matrix material through molding. The "composite stiffening material" comprises a darkened stone/granite material that is hardly a "composite" as described in the instant application. In the embodiment described in Figure 5 the "multi-void core" is made from cement and the "composite" layers are fabricated from "sand, cement and chopped fibres" poured about a series of previously formed cement conduits in a suitable mold. Again, this hardly

constitutes a "micro multi-void" coated on at least one surface with a "composite" material as described in the context of the instant specification. Such is especially the case in newly added claim 20 that specifies that the composite layer comprises a metal matrix composite.

Applicant is unable to comprehend the gist of the Examiner's dissertation regarding anticipation of claim 5 as it relates to Dobson. It is Applicant's position that the foregoing discussion of Dobson as it relates to the anticipation of the claims of the instant application that has been presented hereinabove clearly distinguishes the structure of Dobson from that of the instantly claimed invention and hence the method of manufacture is an academic issue that bears no further discussion.

Although Applicant is unable to grasp the point being made by the Examiner on page 3 of the Official Action as it relates to how the currently submitted claims are commensurate in scope with the examples presented in the application, the following discussion is offered. The examples clearly describe a method for the fabrication of a composite structure that starts with a "micro multi-void" and applies a layer of a composite material, in the case shown, a metal matrix composite. It could hardly be clearer that the product prepared in accordance with the example shown in the specification is adequate to base the claims as currently presented.

Claims 2, 3, 5-12 and 14-19 stand rejected under 35 USC 103(a) as unpatentable over Schubert et al, U.S. Patent No. 6,305,834 in view of Schuster et al,

U.S. Patent No. 4,987,003 in that "Schubert et al disclose a device having a multi-void core of metal foil having two planar surfaces and including a plurality of continuous longitudinal channels while being silent as to the incorporation of layers of a composite stiffening material coated unto the two planar surfaces of the multi-void core". For the sake of argument, it can be conceded that Schubert shows one type of micro multi-void although clearly not that described and claimed in the instant application, since it is clear that the claims of any application must be read in light of the specification and a reading of the instant specification could hardly lead one to look to a structure such as that described in Schubert for teaching as to the manufacture of structural elements of the type described and claimed in the current application. Regardless of the structural similarities between the foil multi-voids of Schubert et al and the structurally useful multi-voids of the instant application it is only with the benefit of 20-20 hindsight and the teachings of the instant application before them that anyone would look to Schubert et al for teachings that might even remotely relate to the instantly claimed invention. Given such an interpretation (in Applicant's opinion an invalid interpretation of Schubert et al) the combination of Schubert et al with Schuster et al is clearly and unequivocally based entirely on hindsight given the teachings of the instant application. The Examiner suggests that Schuster et al teach the application of a metal matrix composite coating on a metal surface for corrosion and mechanical wear resistance. The provision of a flame or arc spray applied coating to a metallic surface for purposes of corrosion/mechanical wear resistance is well known in the art. Such spray applied layers are hardly of a nature as to provide "stiffening" as

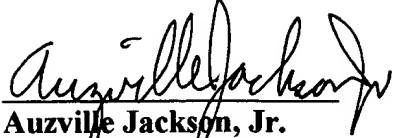
clearly required by the claims of the instant application. While the composite layers in the structurally useful devices of the instant application may also provide corrosion and wear resistance, the layers of Schuster et al do not in any shape or fashion provide structural stiffening as required in the structures of the present application and claims. Again, it is only with the teachings of the instant application before them that the skilled artisan would even attempt to combine the teachings of Schubert et al and Schuster et al. In the last analysis, such a combination would not yield the structurally useful composite claimed in the instant application.

It is therefore respectfully submitted that rejection of the claims of the present application upon any of the bases set forth in the Official Action is, at best, based upon 20-20 hindsight and that even with such hindsight the cited references fail to anticipate or suggest the structural composites claimed in the instant application.

In view of the foregoing amendments to the claims and the remarks presented hereinabove, it is respectfully submitted that the claims as now presented stand in condition for allowance and the same is most earnestly solicited at an early date.

Clean and Marked-up copies of the appropriate pages of the application are included herewith.

Respectfully submitted,

 2/24/03
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